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ABSTRACT

This report is based in part on an analysis of current preservation practices and of the 1988-89 Association of Research Libraries (ARL) Preservation Statistics. It includes discussion of the 10 components of a comprehensive preservation program to which library administrators must give attention. Organizational models for mature preservation programs based on four size groupings of ARL libraries are also included in the report. They address libraries with collections of under 2 million volumes, 2 to 3 million volumes, 3 to 5 million volumes, and over 5 million volumes. In addition, for each size grouping, four levels of program maturity are described with benchmarks for personnel, production, and budgets. The report also includes four case histories illuminating various organizational settings for preservation program development. (MAB)

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Association of Research Libraries

Committee on Preservation of Research Library Materials

Preservation Program Models:
A Study Project and Report

by
Jan Merrill-Oldham
Carolyn Clark Morrow
Mark Roosa

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Association of Research Libraries
Washington, D.C.
1991

The Association of Research Libraries
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Contents

Project Background 5

Introduction 7

Preservation Program Components 9
1. Preservation Administration
2. Environmental Control
3. Replacement and Reformatting
4. Conservation
5. Mass Deacidification
6. Commercial Library Binding
7. Shelf Preparation
8. Stack Maintenance and Collections Improvement
9. Emergency Preparedness
10. Staff Training and User Awareness

Organization and Staffing Models for Mature Preservation Programs 31
Models for collections:
1. under 2 million volumes
2. 2 to 3 million volumes
3. 3 to 5 million volumes
4. over 5 million volumes

Preservation Program Benchmarks for Selected Core Activities 36
Benchmarks for collections:
1. under 2 million volumes
2. 2 to 3 million volumes
3. 3 to 5 million volumes
4. over 5 million volumes

Preservation Program Case Histories 42
1. University of Delaware
2. University of Connecticut
3. Ohio State University
4. University of California at Berkeley

Project Background

The objective of this report is to assist the administrators of research libraries in their efforts to shape programs that will produce significant advances in preserving North American research collections for current and future use.

The need for improved tools for assessing progress, both on the local and North American program level, was articulated by the ARL Committee on Preservation of Research Library Materials at its May 10, 1989 meeting. Among the questions raised were: "How do preservation activities in individual ARL libraries contribute to the North American preservation program? What is the level of local preservation effort needed to address significant deterioration of research materials and to prevent future deterioration? Are existing human and financial resources adequate to maintain endangered research collections in usable condition?"

To address these and several other questions designed to gain a better understanding of resource requirements, the ARL Committee on Preservation of Research Library Materials proposed that the Association seek funding for a special project. The committee proposal was approved by the ARL Board of Directors at its July 15, 1989 meeting. Working with committee members and with Jan Merrill-Oldham (Head, Preservation Department, University of Connecticut, and consultant to the committee), Jutta Reed-Scott, ARL Program Officer, prepared a grant proposal. The two primary objectives of the proposed project were to:

- Develop descriptive models for mature preservation programs; and
- Examine the scale of local effort in ARL libraries to determine whether the aggregate of research library preservation programs in North America constitutes an adequate level of effort to protect research library resources for future scholarship.

The proposal was submitted to the H.W. Wilson Foundation in December 1989. In January 1990, the Foundation awarded a grant of $9,800 to ARL to conduct the project.

The investigation and preparation of this report was carried out by Jan Merrill-Oldham, Head, Preservation Department, University of Connecticut; Carolyn Clark Morrow, Malloy-Rabinowitz Preservation Librarian, Harvard University; and Mark Roosa, Preservation Librarian, University of Delaware. Three members of the ARL Committee on Preservation of Research Library Materials provided oversight and guidance: Scott Bennett, Director of the Milton S. Eisenhower Library, Johns Hopkins University; Carole Moore, Chief Librarian, University of Toronto Libraries; and William Studer, Director of Libraries, Ohio State University. Patricia McClung, Associate Director for Programs, Research Libraries Group (RLG) served as a liaison from RLG.

This report is based in part on an analysis of current preservation practices and of the 1988-89 ARL Preservation Statistics. It includes discussion of the ten

components of a comprehensive preservation program to which library administrators must give attention. Organizational models for mature preservation programs based on four size groupings of ARL libraries are also included in the report. They address libraries with collections of under 2 million volumes, 2 to 3 million volumes, 3 to 5 million volumes, and over 5 million volumes.

In addition, for each size grouping, four levels of program maturity are described with benchmarks for personnel, production, and budgets. The report also includes four case histories illuminating various organizational settings for preservation program development.

The ARL Committee on Preservation of Research Library Materials reviewed a draft of this report at its October 24, 1990 meeting. The Committee approved the final report for publication in March 1991.

ARL Committee on Preservation of Research Library Materials

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Introduction

Preservation has been variously described as a problem, as a challenge, as a crisis, as an idea whose time has come. The need to preserve is a reality that libraries and their parent institutions must address systematically, if they are to continue to provide access to the large research collections that they have built. The scope of the preservation challenge differs from library to library, but study after study confirms that a significant percentage of the retrospective collections in research libraries have deteriorated to the point where their use is impeded. The members of the Association of Research Libraries must take significant action at the local level to expand preservation activity, at the same time as they forge partnerships to address the preservation challenge at the national and international levels.

Two decades ago the phrase "library preservation" described little more than routine commercial library binding, rare book conservation undertaken at a few libraries, some state-based newspaper microfilming projects, a home pressure cooker in a Library of Congress laboratory, and a handful of visionaries.

In 1991, "library preservation" describes a vastly transformed range of activities. Many ARL libraries have significant preservation programs, preservation services offered by the private sector are more widely available, commercial library binding is much improved, the NEH Office of Preservation and the Commission on Preservation and Access have been established, state-wide preservation plans are being put in place, a national program of preservation reformatting is in operation, preservation activities are being coordinated internationally, capabilities for mass deacidification have been created, research questions concerning traditional and electronic storage media are being pursued, a variety of preservation training opportunities are available, and numerous books and journals about library preservation are being published. The scope and pace of change have been breathtaking.

The members of the Association of Research Libraries have played a vital role in stimulating these changes. This report is a distillation of the best existing models for comprehensive preservation programs. It is based on developments that have taken place in ARL libraries over the last two decades. The report systematically explores the components of an effective research library preservation program and provides descriptions of developmental phases for each component, enabling individual libraries to establish their present position and map future directions. In a separate section, benchmarks are presented for several core preservation activities in an attempt to help library directors set a course for the future.

If one steps back from program components and benchmarks, four key features of research library preservation programs are evident.

- Preservation programs are seen to require professional management and leadership, and the research library community has succeeded in employing a remarkable cadre of such professionals.

- Preservation activities are being thoroughly integrated with all other library functions. Threats to the long-term survival of library material arise in every aspect of library operations, from building environments to the adhesive

used for bar code labels. Preservation programs must therefore be comprehensive and library-wide in scope, and a sensitivity to preservation issues must be pervasive among library staff. Preservation has joined the selection of material, cataloging, and reader assistance as a pillar on which library services stand.

- Preservation activities, although they are directed at the protection and salvage of a variety of information media, are still focused largely on books and other paper-based materials. This is the case because paper is now and will continue to be a principal and pervasive medium for the transmital of information, knowledge, and culture—coupled with the fact that most of the paper manufactured in the past century and a half has proved to be impermanent. It is to be expected that the largest share of the library resources devoted to preservation is invested in commercial library binding and collections conservation. The objective of these activities is to ensure that the books and papers that have been amassed over time at great expense remain in or are restored to usable condition.

- Preservation programs must expand and evolve if they are to address the preservation problems associated with both traditional and new information media. While the embrittlement of retrospective holdings will challenge libraries for years to come, collections will also contain greater and greater percentages of non-paper items (electronically stored information, for example), for which preservation strategies are yet to be devised.

A fifth characteristic of each of the preservation program components described in this document is a reverence for the past and the conviction that humanity cannot shape its future without keeping the documents that record that past fully intact. Preservation is for this reason most fundamentally a means to ensure continued access to the record of human existence.

The linkage between preservation and access has been strongly drawn in the design of programs for the treatment of brittle books. Paper that crumbles when used poses the question of the continuing availability of information in the most forceful way. The issue of access has not been made as explicitly for preservation activities that address problems other than brittle paper, activities that in fact account for most of the resources and energies devoted to ARL preservation programs.

The next major challenge for ARL libraries is to place a full range of preservation activities, not just brittle book programs, firmly in the context of enhanced access to information and of service to the national and international research community.

To keep preservation and access strongly linked, and to prevent preservation treatments from becoming devices for triage, research libraries must maintain professionally-managed preservation programs that are closely integrated with other library activities and are comprehensive in scope. These programs must respond to the actual needs of library users and be cost-effective in securing the permanent availability of library materials. This report describes the components of, and gives productivity benchmarks for, program components that are being put in place in ARL libraries. These programs, as they mature, will be capable of preserving the research materials held in North American libraries.

Preservation Program Components

Introduction

The main body of this report articulates a rationale and administrative strategy for building comprehensive preservation programs in research libraries. Each of ten discrete but related activities, referred to as program components, are explored within a four-point framework. The framework is designed to create a context for evaluating an institution's current commitment to the preservation of its collections, enhancing or expanding existing preservation activities, and developing new ones. Much is assumed in the discussions, including the principles, standards, technologies, research background, and management and operating strategies that ARL has helped to initiate, and has documented through its publications and programs.

Several of the components examined represent traditional library functions that can be refocused and redirected to support a preservation effort. Other components have emerged in recent years as key aspects of a preservation effort, and have never before been undertaken by the majority of libraries.

Program components are analyzed with the responsibilities and concerns of senior library administrators as the chief focus of discussion. The analytical framework is as follows:

- **Rationale**

  How does the activity contribute to the longevity of collections and to the effective functioning of the library?

- **Administrative Issues and Policy Implications**

  What are the issues and broad institutional policies that library administrators need to consider and support?

- **Human and Material Resources**

  What are the resources required, in general terms, and what decisions will library administrators be called upon to make?

- **Developmental Phases**

  What are the stages of development that library administrators can anticipate will emerge from the commitment to undertake a new component of a comprehensive preservation program or to upgrade an existing component?

The descriptions mark a particular moment in the ongoing evolution of preservation programs in research libraries. They reflect development that has been underway over the last two decades, and represent the rather recent consensus within the ARL membership that in order to enhance access to research collections today, and to ensure access in the future, broad-based, multi-faceted preservation programs must be mounted. It is hoped that this document will define that challenge more clearly, and contribute to institutional efforts to meet it.

1 Preservation Administration

Rationale

In order for a library's preservation efforts to emerge as a program, as opposed to a set of fractured and unrelated activities, it must have a strong administrative component. The preservation librarian works closely with senior colleagues in the library to ensure that preservation activities are coordinated and in balance with the library's other major programs. He or she assumes the role of preservation advocate in discussions concerning the mission and effective functioning of the library. As a senior library officer, the preservation librarian is responsible for recommending preservation policy and has the authority to enforce policies that have been approved by the library administration. The preservation librarian also serves a crucial advocacy and information role with the library's constituencies as well as its governing and advisory bodies, helping the library director make the case for a comprehensive preservation effort. In order to function effectively in this administrative position, the preservation librarian must have access to the library's decision-making and planning process.

The preservation librarian in a research library also oversees the development and smooth functioning of the operational components of the preservation department. This is accomplished through appropriate delegation to line supervisors of production-oriented activities such as conservation, binding, and reformatting. For policy-driven components such as environmental control, emergency preparedness, and security of library materials, the preservation librarian provides expertise and leadership. Determining the major growth and direction of the library's preservation efforts, however, such as participation in federal grant projects and launching a mass deacidification program, is a responsibility shared among senior library managers. Decisions are arrived at in the same fashion as they are for other major programs such as intellectual access and research services.

Finally, the preservation librarian represents the library in professional forums and participates in national professional affairs. He or she ensures that the preservation activities implemented in the library are consistent with national standards and reflect up-to-date preservation techniques and effective management strategies. When new technologies or strategies are under discussion or pilot projects underway, the preservation librarian analyzes the issues and provides the library administration with recommendations and, when appropriate, planning documents. A substantial portion of the preservation librarian's time is devoted to these crucial administrative and professional tasks.

Administrative Issues and Policy Implications

The major policy issues associated with the administrative component of the preservation program include the placement of preservation within the library organization, the rank of the preservation librarian, and the level of staff allocated to preservation in order to run the day-to-day operations of the program.

If preservation is placed within another major function such as collection development or technical services, the head of this functional area must assume some of the key administrative responsibilities for the preservation program, including the role of preservation advocate. Unless the associate university librarian to whom the preservation librarian reports sees himself or herself as responsible for the success of the preservation program to the same degree as for the other activities in his or her charge, a conflict of interest and stagnation of preservation program development will be inevitable. It is essential that the senior administrator responsible for preservation be committed and able to focus on appropriate policy and long-range planning for preservation. Responsibility for the development of the preservation program must be made an integral part of the job description and performance evaluation criteria for the administrator to whom the head of the preservation program reports.

Logical arguments can be made for placing preservation under an associate director for collection development, public services, or technical services; or under the library director. The selection of an organizational site for preservation may come down to who is in the best position to ensure that the program actually develops over time in relationship to the needs of the library collections.

Human and Material Resources

Because preservation as a distinct function is a relatively new concept in research libraries, the resources necessary to mount an effective program are still being defined. ARL first attempted to set resource-related goals with its "minimum preservation guidelines"[1] and has continued its pursuit through an October 1988 program on preservation,[2] the collection of annual preservation statistics, and this current project to define a series of models and benchmarks for preservation program development. The emerging national context for determining allocations for conservation, binding, and replacement of deteriorated items will be helpful in justifying local commitments. Personnel issues include the rank and authority vested in the preservation librarian and the level and number of staff assigned to preservation. Program development can be crippled easily if the preservation program is not adequately staffed and is placed at a level that is inappropriate for the responsibility vested in it.

Developmental Phases

- A commitment to preserving the collections is incorporated into institutional mission statements.
- Preservation program planning is initiated under the aegis of the library administration and approved according to the library's administrative process.
- Preservation is positioned in the library's organization so as to ensure that support and direction are appropriate to the stage of program development.
- Preservation activities and policies are developed and integrated fully in balance with other major library functions.

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1 *Guidelines for Minimum Preservation Effort in ARL Libraries.* (ARL, 1983).

2 Proceedings published as *The Preservation Challenge: A Research Library Agenda for the 1990s.* (ARL, 1990).

2 Environmental Control

Rationale

Research libraries develop collections for the information they embody. The choice of original recording medium is usually beyond the library's control, and items are regularly acquired that are neither durable nor chemically stable. The longevity of the various media on which library materials are recorded—paper, vellum, photographic emulsions, magnetic tape, various types of disks—can be influenced, regardless of their physical characteristics, by controlling the environment in which they are stored. All organic materials are in a constant state of deterioration, but the rate at which they degrade is affected by heat, humidity, light, air quality, and wide fluctuations of temperature and humidity. When temperature and humidity are low, exposure to light is minimized, air is free of gaseous and particulate pollutants, and environmental conditions are stable, the chemical reactions that lead to embrittlement of acidic paper and damage to photographic emulsions and magnetic tape are slowed dramatically.

One authoritative analysis of the relationship of environmental control to paper longevity projects that dropping storage temperature from 80 degrees F to 60 degrees F will produce a more than three-fold increase in the life of paper.[3] Some materials, including film and magnetic media, are even more sensitive to environmental conditions than is paper. Temperature, humidity, light, and and air quality are all measurable and controllable. While building renovation is costly, improved environmental control represents, unequivocably, the lowest per-unit cost of any preservation option.

Unlike the formidable challenge of renovating existing library buildings to improve environmental controls, the building of secondary storage facilities presents an excellent opportunity to design appropriate systems. The existence of a secondary storage facility offers an additional strategic preservation advantage for library administrators. Higher-use materials stored in proximity to users can become the focus of intensive preservation efforts such as deacidification and reformatting while lesser-used materials and special collections are stabilized in an optimal preservation environment.

Administrative Issues and Policy Implications

Library administrators must establish goals for improving environmental conditions based on local data that have been gathered and on existing standards and guidelines. An American National Standard for macro-environments in library

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[3] Sebera, Donald K. "A Graphical Representation of the Relationship of Environmental Conditions to the Permanence of Hygroscopic Materials and Composites." *Proceedings of Conservation in Archives,* May 10-12, 1988, Ottawa Canada.

buildings is currently under development.[4] Often capital projects will be required, and must be made a part of the parent institution's long-range plan. The opportunity for renovating an existing building or constructing a new one comes rarely, and the case for environmental control should be well documented before the crucial negotiating time arrives.

Human and Material Resources

Assessing environmental conditions falls within the purview of the preservation librarian, who is responsible for providing the library administration with documentation to justify improved environmental control. Support for improvements, however, must emanate from the library director's office. Communication between the preservation librarian and the facilities staff of the parent institution must be preceded by, and is enhanced by, communication between senior library administrators and the parent institution's facilities management group. To be effective, the library should have clear goals in mind and be prepared to provide for building planners and campus officials a cost/benefit analysis related to environmental control in libraries. Complaints about the operation of environmental systems must be issued from the office of the library director, and facilities staff must be held accountable for results. Preservation issues related to climate control should be clearly distinguished from concerns expressed regarding the comfort of the library staff.

Improved environmental control, particularly when it involves renovation or new library space, will be expensive. While compromise is usually inevitable, decisions that seem to yield a large cost savings at the time must be weighed in terms of the long-term costs to the collections of skimping on environmental control.

Developmental Phases

- All library buildings are surveyed, data are gathered using specialized equipment, and results are reported.
- Standards for optimum environmental conditions are defined and communicated to campus officials, along with initial data and reports regarding existing conditions.
- System-wide priorities are set for upgrading facilities based on existing conditions and the nature of the materials housed.
- An expanded program of environmental monitoring is initiated by the parent institution's facilities management group with clear mandates for reporting and improving conditions over time.
- Conditions are improved to the maximum extent possible given existing buildings and systems.
- Long-term goals are articulated to the library's parent institution well in advance of planning and budget meetings. Plans are developed to improve environmental conditions as part of renovation and capital building projects.

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[4] Standards Committee R of the National Information Standards Organization is drafting this standard for approval as an American National Standard.

3 Replacement and Reformatting

Rationale

It is estimated that nearly eighty million books in North American research libraries are "threatened with destruction because they are printed on acidic paper."[5] Surveys conducted in academic and research libraries over the past ten years confirm the enormous scale of the brittle book problem. An equal threat to information access is posed by the growing number of books that have, through normal use, been damaged beyond repair. There is also evidence of widespread problems with non-paper media, such as certain types of motion picture film, sound recordings, and videotape. Chemical and physical deterioration are eroding strong research collections.

Irrevocable loss of information is avoided and a collection's vitality and aggregate research value is maintained when the data contained on deteriorated media are transferred to more permanent, durable formats. Collection depth and breadth are secured, and the intellectual integrity and research utility of the collection is protected. Furthermore, when bibliographic records are converted to online records and upgraded as part of the reformatting process, usable copies of once-deteriorated materials are more accessible locally, regionally, nationally, and internationally.

The brittle book problem overtook the larger, older research libraries before its potential impact on the traditional use of scholarly resources was well understood. Embrittlement rates of 25-35% in the older collections make the problem seem almost insurmountable. Fortunately, those ARL libraries in which brittle book problems have not yet reached crisis proportions can learn from the experience of their older counterparts, and develop policies and procedures necessary to meet the challenge of replacement and reformatting before numbers reach overwhelming proportions. These libraries will also have the advantage of early intervention through mass deacidification.

Administrative Issues and Policy Implications

Fundamental to a reformatting and replacement program is an administrative decision regarding the level of commitment a library is willing and able to make to retain the information content of deteriorating materials. Difficult decisions follow that commitment. Administrators must decide whether to deal only with materials that are identified during the course of use, or to undertake, in addition, reformatting projects by subject (e.g., nineteenth century Africana) or by format (e.g., cellulose acetate sound recordings). If projects are to be considered, appropriate collections must be identified. Physical and subject assessments established through surveying will help define an appropriate level of response and highlight areas of need.

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5 *Preserving Knowledge: The Case for Alkaline Paper.* Washington, DC: Association of Research Libraries, 1988.

Administrative decisions must be made, with guidance from preservation and collection development staff, regarding the reformatting options that the library will support. The pros and cons of the various options must be explained, including microfilming on roll film and microfiche, photocopying onto alkaline paper, reproduction of unstable films on safety film, and digitization and electronic storage.[6] Consideration must be given to whether reformatting will be performed in-house, under contract with commercial vendors, or both. The library director must allocate staff and funds adequate to the task. Written documentation and well-produced audiovisual programs are available and can enhance efforts to educate key administrators in the library's parent organization and other potential supporters regarding the widespread deterioration of research materials.

Human and Material Resources

The preservation librarian is responsible for documenting the need for a replacement and reformatting program; for working in concert with collection development, cataloging, and other staff to develop policies and procedures; for supervising and evaluating activities; and for working with collection development staff to develop grant proposals to outside funding agencies, when appropriate. Collection development staff must examine deteriorated materials identified by preservation and other staff, and make decisions regarding their disposition. A portion of the deteriorated material reviewed for preservation will be available as reprints, commercial microfilm, or microfilm produced by other research libraries, and funds to acquire these replacements will be needed. Cataloging staff must enter records for replacements and upgrade bibliographic records for reformatted materials. Staff are also required for inspecting and preparing materials for reformatting, carrying out the filming and/or photocopying if reformatting is done in-house, and evaluating finished products.

Developmental Phases

- A survey methodology is devised, the collections are surveyed, and results are analyzed to assess replacement and reformatting needs. This information is integrated into the library's overall fiscal planning.
- A decision is made regarding whether to reformat materials in-house, through contractual arrangements, or through some combination thereof. Space and equipment are acquired as necessary.
- Preservation screening, searching, and decision-making is undertaken for deteriorated materials, along with procedures for microfilming, photocopying, conversion, and quality control. Contractual services are arranged, additional staff are hired and trained, and existing staff are retrained as appropriate.
- The quantity of work undertaken is in balance with the quantity of deteriorated material identified. Production statistics are maintained to determine ongoing costs.
- Opportunities for descrete subject- or format-based reformatting projects with other institutions are investigated and carried out if appropriate and feasible. Grant funding possibilities are investigated and pursued.

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6 This technology is currently being explored by several institutions on an experimental basis.

4 Conservation

Rationale

While a central mission of research libraries is to ensure that collections are preserved for future generations of scholars, equally compelling is the commitment to develop programs and services that stimulate the greatest possible use of collections. Because books and other library materials are typically manufactured to serve the needs of a single reader, they are rarely durable and sustain considerable damage with repeated use.

A conservation program is an effective hedge against the ravages of use and time. While some libraries have long engaged in the conservation of rare materials, general collections are increasingly targeted as the focus of in-house treatment, and this activity is referred to as "collections conservation." In recent years collections conservation programs have begun to replace traditional book repair units, which typically employed procedures more damaging to materials than the damage they were meant to correct.

In-house conservation treatment of general collections is often less expensive and can be accomplished much faster than commercial binding. Collections conservators can mobilize technicians and student workers to achieve extremely high production levels for a relatively low per-item cost. Damaged materials on reserve can be given priority treatment and returned to the shelf quickly. Minor repairs can be performed on materials in the early stages of deterioration, before problems escalate into damage that necessitates extensive treatment or rebinding. Interesting and important original bindings can be retained, often at less cost than replacing them with commercial bindings. In addition, commercial library binding of materials can often be improved if binding is preceded by preliminary conservation repairs and reinforcement. The net result of a collections conservation program is that each year a significant number of damaged materials can be restored to usable condition, resulting in gradual improvement of the overall condition of the collections. An adjunct benefit of collections conservation is enhanced respect for materials on the part of library patrons, who are less likely to have to use badly deteriorated items on a regular basis. Heightened respect often translates into more careful handling.

While it may be prudent to contract for the conservation of rare and valuable materials to regional centers or private conservators, there are advantages to treating rare materials in-house if the resources to do so can be identified. A conservator qualified to treat rare and valuable materials can upgrade the overall expertise of conservation staff through formal training and day-to-day contact, and can supervise and evaluate the contracting out of conservation work when the need to treat rare materials exceeds in-house capability and additional funds are available. The conservator can also supervise the mounting of exhibits to ensure that they are non-damaging to library materials.

Administrative Issues and Policy Implications

Often a research library's repair unit serves as the nucleus for the development of a conservation program. Senior administrators must consider placement of the repair unit within the library's organizational structure. Moving it from its traditional site to a newly created preservation department has numerous demonstrated benefits. Consideration must be given to retraining existing staff, making it possible to abandon traditional practices for those that are sound. Administrative support must be voiced for upgrading and professionalizing conservation activities in the context of the library's overall preservation program. Most importantly, administrators must present a credible plan to the library's parent organization for developing or expanding a conservation program, accompanied by statistical evidence that supports the need for such a program. Inevitably, additional institutional resources will be required.

Human and Material Resources

Revamping an in-house treatment program is best done in an environment where the need for upgrading has been documented. A survey of the condition of the collections, planned and implemented by the preservation librarian with the help of support staff, can define in objective terms the body of materials that are worn and damaged but not brittle. The preservation librarian is also responsible for assessing procedures, work flow, and the level of skills in the existing repair unit or laboratory, and for making recommendations for change. The advice of a professional conservator is invaluable during the assessment stage. Consultation services can be arranged on a contractual basis. Staffing is likely to be inadequate in terms of numbers and level of skill, if the library has not had a previous commitment to upgrading the condition of the collections.

It may be necessary to earmark resources to hire a professional collections conservator if the library has none, and additional professional conservators and/or trained technicians may be needed to ensure that the size of the treatment program bears some relationship to the size of the problem that has been identified. It may be possible to redistribute staff, once traditional preservation activities are consolidated within a preservation unit, to address identified needs in a more effective way. It may be necessary to identify space, or existing space may require renovation; and it is likely that work benches and equipment will require upgrading.

Developmental Phases

- The condition of the collections is assessed to document conservation needs.
- The nature and scope of the existing repair or conservation program are assessed.
- Arrangements are made to provide training opportunities for staff as necessary.
- Changes in the nature of supplies are made as necessary.
- Space, work benches, and equipment are assessed by a professional conservator, and plans are made to renovate and acquire as necessary.
- Additional staff are hired at appropriate levels as resources are made available.
- The quantity of work undertaken is in balance with the quantity of material identified as needing conservation treatment. Production statistics are maintained to determine ongoing costs.
- Conservation procedures are continually analyzed to ensure that up-to-date methods and materials are being used.

5 Mass Deacidification

Rationale

The overwhelmingly acidic nature of the paper in books printed since 1840 has been confirmed by a number of surveys conducted by ARL libraries.[7] The deterioration of this acidic paper has caused the brittle book crisis now faced by larger, older research libraries. Brittle books are not yet a pressing problem for all ARL libraries, but it is inevitable that they will be unless steps are taken to stabilize paper through mass deacidification. Mass deacidification combined with low temperature, off-site storage for lower-use materials may become the preservation model of the 1990s. While waiting until acidic materials deteriorate, and then reproducing their contents may be an acceptable strategy for many items, research library collections contain significant numbers of illustrated and color materials that do not reproduce well on film and many items, such as reference works, that are more easily or appropriately used in paper copy. In addition, researchers tend to prefer paper to microfilm.

The technology now exists to arrest the degradation of acidic paper by treating large batches of books and documents en masse, neutralizing the acid and leaving an alkaline buffer to prevent re-acidification over time. This technology is most suitable for acidic, but not yet brittle books (both retrospective and newly acquired). It is important to remember that deacidification does not restore paper strength, although research and development into mass paper strengthening is underway. Fortunately, the prognosis for new books entering the collections today is somewhat more optimistic than it has been at any time since the mid-19th century. Many paper mills have already converted to the alkaline process and more are planning to do so because conversion has economic benefits. The percentage of alkaline paper produced in the U.S. for printing and writing (excluding newsprint) is expected to reach 75% of total production in 1992.[8]

If research libraries act now, they may be able to isolate and contain the acidic paper problem for all or selected parts of the collections, instead of leaving it for the next generation of library administrators to address.

There are currently several mass deacidification processes under commercial development; and some that are already marketing services and are prepared to develop custom facilities for groups of libraries. Library managers estimate that it costs $50 per item to provide intellectual and physical access to new volumes in

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7 The majority of these surveys were conducted as part of formal, self-study preservation planning projects conducted through the ARL/OMS Preservation Planning Program.

8 Source: Tony Henle. "Alkaline penetration forecast," *The Alkaline Paper Advocate* 3,1 (March 1990), page 9.

addition to the cost of purchase. At projected costs of $6-$10 per book, mass deacidification is in the same price range as commercial library binding, and similarly can be considered a cost-effective preventive preservation option.

Administrative Issues and Policy Implications

Chief among the administrative tasks associated with mass deacidification is to integrate planning for such a program into the library's overall fiscal planning. In preparation for undertaking mass deacidification, the scope of the acidic paper problem must be calculated and selection policies determined. This information will enable the formulation of strategic and financial plans. The library director must participate in the selection of a technology and vendor, negotiate a new program request with the library's parent organization, and authorize development of the necessary processing capability within the library. The preservation librarian has a role to play in assisting the library director to communicate the need for mass deacidification to the library's constituencies as well as to its governing and advisory bodies.

Human and Material Resources

At the present time, considerable management and technical documentation exists to guide the development of a deacidification program.[9] It is the responsibility of the preservation librarian to investigate available services and keep abreast of new developments in the technology and in the vendor population.

Recommending a course of action for the library will require the synthesis of a number of management issues—from the scope of the problem, to strategies for selecting materials that should be treated, to crucial financial considerations. The library director will need to assemble a task group of library managers to sort through these issues and recommend a balanced program with distinct developmental phases. In addition to choice of technology and vendor, the task group must consider the in-house management of a deacidification program. The library's commercial binding program may prove a useful model for organizing processing for deacidification, in that the functions and staffing needs of the two operations have similarities. Resource needs will include new positions for processing, collection development staff time to select categories or individual items for treatment, and preservation staff time to monitor the program and assess quality and effectiveness. An increase in operating funds will be needed in order to undertake deacidification

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9 *Mass Deacidification Systems: Planning and Managerial Decision Making* (ARL, 1990) provides an outline of the critical decision points that must be addressed by a library in its plan to launch a mass deacidification program. *Technical Considerations in Choosing Mass Deacidification Processes* (Commission on Preservation and Access, 1990) describes the technical issues that libraries must consider when choosing a mass deacidification processes, and analyzes the usefulness of the tests typically used to determine the efficacy of a process. *Request for Proposals to Provide Deacidification on a Mass Production Level of Paper-Based Books in the Collections of the Library of Congress* (LC, 1990) contains detailed requirements for the information that a vendor must provide when proposing a mass deacidification service to meet LC's needs.

on an ongoing basis. In today's economic environment, a program that starts small and gradually builds to an appropriate level may have the best chance of success.

Developmental Phases

- A needs assessment is conducted to serve as the basis for financial planning.
- A selection policy for mass deacidification is developed along with alternative funding models.
- The need for deacidification is communicated to resource allocators in the parent institution; a minimal program is proposed with recommended scale-up.
- A technology and vendor are chosen and options for services explored.
- Identification and preparation procedures are established and implemented in the library.
- The deacidification program is scaled-up gradually over a period of years to meet the needs of the library for the stabilization of acidic paper.

6 Commercial Library Binding

Rationale

Commercial library binding is the preservation mainstay of most libraries. Library binding involves the use of covering materials that are durable and also water and oil resistant, cover board that does not delaminate, sturdy spine linings, sewing thread with high tensile strength, adhesives that remain effective over time, alkaline papers, and techniques that are considerably different from those used by book manufacturers. Library-bound volumes have an outstanding track record for remaining in usable condition over time. Library binding ensures that loose issues of serials are consolidated and protected, paperbacks are made serviceable through repeated circulations, and worn and damaged monographs with flexible paper are restored to usable condition. Changes in binding technology that have taken place in recent years have yielded bindings that open better and are easier to photocopy than their predecessors. Per-unit costs for binding are low, and services are readily available.

Administrative Issues and Policy Implications

When a research library establishes a preservation department, bindery preparation activities typically shift to that department. It is in the preservation department that appropriate expertise resides for analyzing binding technology, determining how to apply it best, developing appropriate specifications, and evaluating the quality of binding and other services. (Staff outside the preservation department must play a role in determining what information should be stamped on the spines of serial volumes, a function that can be managed successfully across departmental lines.) The close proximity of bindery preparation to conservation staff has considerable benefits in the form of training sessions regarding book structure and the nature of materials, day-to-day contact, and the development of a single work flow for worn and damaged volumes.

The preservation librarian, acting on observation and advice from collection development staff, develops policies regarding the categories of library materials that should be library bound. If specifications governing the library's service and technical requirements for library binding are not in place, in the form of a document or formal contract, the librarian develops such specifications. Existing specifications may require revision to bring them into line with up-to-date practices. Administrators must be prepared to seek funds to increase budgets if binding has been inadequate in the past. They may also need to consider shifting binding funds and staff to other preservation activities, if on the recommendation of the preservation librarian, such a change would bring the library's preservation program into better balance. It may be possible, for example, that library binding has been applied inappropriately in the past, particularly if a library has had no collections conservation program.

The library administration and preservation staff must work together with systems staff to computerize binding functions, and link binding preparation systems with information residing in the library's on-line catalog and circulation system. Where negotiations with vendors are required, senior administrators must play a key role in justifying requests for linkages, and may need to work with administrators in other libraries to mount collective efforts to induce change.

Human and Material Resources

Today there is an array of traditional and innovative binding options available, and new auxiliary services that must be evaluated for possible use. Understanding book structure and being able to assess the condition of book paper and original bindings are essential to using alternative techniques and new services successfully. As the skills required to manage a binding program increase, so too must the level of staff hired to supervise the bindery preparation program. Staff members in high-level paraprofessional positions are appropriate in some research libraries; in larger libraries an entry-level librarian may be more suitable. The overall professionalism of the supervisor can make the difference between a binding program that is only adequate and one that is well-integrated with the library's other preservation objectives.

The binding budget is often targeted for cuts when budget crises arise. It is the responsibility of the preservation librarian to articulate and justify budget requirements to meet the need to bind new acquisitions and undertake retrospective binding projects as necessary. It is also the responsibility of the preservation librarian to make a case for higher per-unit costs if the quality differential is significant.

The available turnkey computer systems for binding preparation streamline processing, reduce paper files, improve accuracy, and enhance reporting and data management capabilities. To take advantage of technological advances and savings in staff time will require that the library purchase computers, printers, and software. In some cases linking computers through local area networks greatly enhances efficiency.

Developmental Phases

- The library's commercial library binding program is assessed by the preservation librarian, who develops plans for improving it as needed. This may include moving the program from another department into preservation if such a shift has not already taken place.
- Budget and staff allocations are studied, and recommendations for change are presented to the library administration for consideration.
- The library's preservation concerns related to library binding are communicated to the library binder. A relationship between library and binder is established at the professional level, to supplement traditional work-flow oriented lines of communication.
- New or revised binding specifications are developed, either as part of a formal bid proposal where legal contracts are operative, or to serve as a written statement of agreement between library and binder.
- The binding program is monitored on a regular basis to ensure that it meets the needs of users and the collections, and is updated as appropriate.

7 Shelf Preparation

Rationale

The relationship between preservation and shelf preparation (i.e., preparing materials for use by plating, labeling, stamping, and other marking procedures) is perhaps not an obvious one. There are, however, distinct advantages to including shelf preparation among the activities for which the preservation department is directly responsible. First, like neat, clean book stacks, neatly processed volumes send subliminal messages to readers, signaling that library materials have value. Neatly marked books can engender careful handling, whereas sloppy processing can lower the value of library materials in the eyes of the user. Because the preservation department is fully focussed on the physical nature of materials, staff in that department are likely to accept the importance of carrying out basic functions in skillful ways.

Second, many supplies available for marking library materials are ultimately damaging. These include pressure-sensitive spine label protectors; date due slips, book plates, and book pockets manufactured from acidic paper; and chemically unstable containers intended for non-book items. In the preservation department, where conservation activities take place, products will be tested on a regular basis and rejected if they are potentially damaging. When projects having to do with bar coding and storage labelling projects arise, the preservation department needs to play an active role in both the selection of systems and materials as well as the development and implementation of procedures.

Third, and most importantly, the shelf preparation unit is an ideal place to screen problematic materials that have been cataloged or recataloged and are moving into the stacks. Shelf preparation staff, trained by conservation staff, are able to identify and pull from the work flow embrittled, worn and damaged, and unbound materials that should receive some type of preservation treatment before use. While such training can be done across departmental lines, there are considerable advantages to working in a context where the condition of materials is paramount in the concerns of all departmental staff; where processing can be monitored regularly; and where the physical processing required prior to shelving (i.e., marking, binding, conservation) is organized in a single, efficient work stream.

Finally, combining shelf preparation in the same unit as preparation for commercial library binding enables more flexible use of staff, particularly when work loads vary and student workers are employed for more routine tasks.

Administrative Issues and Policy Implications

Library administrators must consider the placement of shelf preparation activities within the organization, and whether assigning that function to the preservation department would benefit the collections and make better use of staff.

Human and Material Resources

The importance of good management of shelf preparation activities, including long-range planning and review of long-standing policies and procedures, should not go unrecognized. A well-organized manager with good teaching and supervisory skills can mobilize student workers to perform preparation procedures skillfully, freeing full-time staff for other work. Responsibility for day-to-day operation of the shelf preparation program should be assigned a rank that will attract an energetic, creative person to the position. Investment in a strong supervisor can actually yield cost savings.

Examining preparation procedures to ensure that they are non-damaging can result in changes in specifications for supplies, and in modest cost increases for higher quality products.

Developmental Phases

- As planning for a new or evolving preservation program proceeds, the feasibility of incorporating shelf preparation within the preservation department is studied and recommendations reviewed by the library administration.
- Conservation staff are charged with responsibility for testing all preparation supplies, reviewing all procedures, and recommending changes as necessary.
- The quality of supplies and the nature of procedures are monitored on a regular basis to ensure that shelf preparation is non-damaging, carried out with care, and enhances preservation of the collections. As new preparation needs arise, available procedures and materials are studied to identify those that are most desirable.

8 Stack Maintenance and Collections Improvement

Rationale

In addition to the macro-environment in library buildings (that is, temperature, humidity, light, and air quality), other physical conditions under which collections are stored have a major impact on their longevity. Proper shelving and vacuuming of bound materials; rehousing of paper, photographic, and other archival materials; routine cleaning of microfilm readers and VCRs; and construction of protective enclosures for rare books are but a few examples of the activities that help to protect library materials from physical and chemical deterioration. When dust collects on books, for example, it absorbs and holds moisture that accelerates deterioration by acid hydrolysis.

Neat, clean book stacks with volumes well supported by bookends not only minimize unnecessary damage and physical stress, but also encourage the proper use of research collections by patrons and staff, sending the message that library materials deserve respect and care. The opposite reaction is stimulated when shelves are in disarray and dirty.

Administrative Issues and Policy Implications

It is the role of the library administration to ensure that clear, firm policies for the storage of library collections are put into place.

Improved stack maintenance and well established care and handling guidelines often trigger changes in library routines. It is essential, therefore, that the impetus for doing so comes from senior management, and that institutional support for change is clearly and repeatedly articulated. It may be desirable to shift responsibility for stack maintenance from traditional sites (e.g., the circulation department) to the preservation department. It may be easier to encourage staff whose mission is "preservation" rather than "reshelving" both to reshelve materials in the right order and to handle materials correctly; and to establish non-traditional routines such as the vacuuming of books and shelves. A second option is to mandate preservation training for shelvers, and to establish a formal advisory role for the preservation librarian regarding stack maintenance policies and procedures.

Human and Material Resources

Traditional stack maintenance activities (reshelving and shifting) should be redefined to include activities that contribute to the improvement of collections (cleaning, shifting to avoid fore edge shelving of oversized items, identification of materials that need treatment, etc.). This approach ensures that those who handle large quantities of materials also contribute to their preservation. Shelvers and maintenance staff are likely to require retraining and will benefit from gaining an understanding of how stack maintenance procedures enhance the overall preservation program. This can be accomplished in large part through a change in attitude and liaison between stacks staff and preservation staff; however, clear lines of authority and responsibility may help to avoid situations where problems persist without resolution.

Combining traditional stack maintenance activities with collections improvement and minor refurbishing is cost efficient. There will be times when reshelving as quickly as possible is of primary importance, and there will be slower times when staff are able to undertake collections improvement tasks in addition to reshelving. Flexibility and diversity provide more interesting jobs and make better use of staff time.

Simple preservation procedures such as wrapping, interleaving, and measuring volumes for protective enclosure can be performed in situ and en masse to protect library materials at a very low unit cost; at the same time materials in need of more extensive treatment can be identified efficiently and removed before further damage or loss occurs.

Developmental Phases

- Policies for the storage of library collections are developed by the preservation librarian and affirmed by the library administration.
- Training of staff for traditional stack maintenance activities is combined with training for collections improvement activities.
- A schedule is devised to make the best possible use of staff time and to take full advantage of ebbs and flows in the work load.

9 Emergency Preparedness

Rationale

There is nothing that can put a library out of business faster than a fire, flood, or earthquake. No institution is immune to the devastation that natural or other disasters leave in their wake. Advanced planning for potential disasters can make the difference between temporary loss of service and catastrophe. A written disaster preparedness plan is the key to fast recovery because it provides senior administrators with an immediate response mechanism. Panic (all too common in times of emergency) is avoided when the library is prepared for small as well as large-scale incidents. With proper planning, damaged materials can be salvaged and treated successfully, losses are dramatically reduced, and service is resumed in a timely manner.

Administrative Issues and Policy Implications

An emergency preparedness plan must be written by a committee that the library director appoints. The committee, chaired by the preservation librarian or another appropriate administrator, is responsible for identifying building hazards, obtaining supplies and identifying services, setting salvage priorities in concert with collection development staff, and developing response and recovery mechanisms. The written plan is approved by senior administrators who allocate funds for supplies and for disaster recovery services as needed. In addition, steps are taken to ensure that the parent organization is well-informed of all planning efforts and that these efforts dovetail with existing institutional and local contingency measures. The library director must educate the parent organization regarding the importance of rapid response to library needs in times of crisis. The race against irreversible damage can only be won with adequate resources and widespread support.

Human and Material Resources

An emergency planning committee is required to draft a plan; many models exist already. The plan should contain sections pertaining to disaster prevention, response, and recovery; and clearly articulate the roles and responsibilities of administrators and staff. Emergency supplies and equipment must be purchased and disaster recovery services retained. The plan must be distributed and explained to staff and they must be trained in its use. In the event of an emergency, the preservation librarian directs all response and recovery activities.

Developmental Phases

- The emergency planning committee is appointed.
- A plan is drafted and circulated for comment to library staff, library administrators, university and local safety officials, and fire department personnel. The plan is revised as necessary, endorsed by the library administration, and widely distributed.
- Supplies for responding to small water related incidents are purchased and strategically located throughout the library. Staff are trained to respond to

emergencies; they learn who will be responsible for what activities in times of emergency, and how to carry out basic procedures such as covering book stacks with plastic sheeting and handling wet and fire-damaged materials of all types.

- A core disaster recovery team, as identified in the emergency plan, meets on an annual basis to review individual and collective responsibilities. A schedule for updating the plan is established, as well as a mechanism for monitoring and maintaining supplies and equipment. Team membership changes periodically.

10 Staff Training and User Awareness

Rationale

Enormous and constant damage is inflicted on library collections by people who do not understand the physical nature of library materials or how to care for them so that they remain in usable condition. Mishandling is more often the result of ignorance rather than intent, and can be ameliorated by training staff and users to care for, handle, and store a wide array of library materials properly. The positive effect that consciousness-raising has on collections can be significant. Proper use of bookends, for example, prevents books from leaning and reduces the number that will require repair.

There are two primary advantages to implementing a staff training and user awareness program. First, as responsible people become educated, fewer books are damaged and costs for repair and replacement are reduced. Second, trained staff and users become advocates for preservation and share responsibility for enforcing care, handling, and storage guidelines inside and outside the library.

Destruction and theft of library materials are criminal acts and sometimes stem from thoughtlessness and ignorance. Educational efforts can highlight the negative effect of vandalism on the library and its present and future users, reminding people that library materials are an expensive, shared resource and that many items are impossible to replace. For those who are indifferent to reason, the library must forcefully publicize the consequences of being caught destroying or stealing library property.

Administrative Issues and Policy Implications

The development of policies for the handling and use of materials goes hand in hand with the development and implementation of storage policies.

Administrators must encourage and support attendance at preservation training sessions. These sessions will address the correct handling of books and other types of library materials and relevant preservation issues.

The library administration must endorse a thorough examination of library procedures and practices that pose an immediate or potential threat to library materials, and be prepared to support changes that affect the day-to-day routines of staff and users. The use of book drops (a primary cause of damage to book bindings) will need to be examined, for example, and the drops eliminated or their use restricted to hours when the library is closed. Restrictions on eating and drinking will need to be enforced strictly. Strong administrative backing and public relations work with the library's primary community of users is essential if new procedures that are more inconvenient or stringent than traditional ones are to be implemented effectively.

The library administration must obtain from legal counsel a clear interpretation of applicable laws and penalties that cover the theft and destruction of library property.

Human and Material Resources

Staff training for all those who handle books and other materials on a routine basis must be planned and organized by the preservation librarian or collections conservator. The preservation librarian, often working with appropriate library committees, must propose training policies and procedures, plan exhibits, and design public outreach materials. In addition, resources will be required for the purchase or production of bookmarks, fact sheets, and posters; as well as for audiovisual media and equipment for training sessions.

Developmental Phases

- Current staff and patron practices are observed so that training can be shaped to suit local needs and problems.
- Group training sessions on proper care and handling of library materials are held for all newly-hired library staff and student workers. Printed and audiovisual materials are made available.
- Restrictions regarding eating and drinking in library buildings are implemented.
- Educational materials are purchased or produced and distributed through a variety of means, including at public service desks and as part of traditional bibliographic instruction.
- Exhibits on the proper care, handling, and storage of library materials are mounted periodically, showing examples of materials damaged through negligence and explaining what can be done to stop such damage.
- Training materials and programs are reviewed and revised if necessary on an annual basis, so that the preservation education program retains effectiveness and a high profile.

Organization and Staffing Models for Mature Preservation Programs

Introduction

The charts that follow depict basic organization and staffing models for mature preservation programs in four sizes of ARL libraries: under 2 million volumes, 2 to 3 million volumes, 3 to 5 million volumes, and over 5 million volumes. The models reflect the history and development of preservation programs over the last two decades. The models are appropriate for the preservation needs of a central library collection. They do not attempt to reflect the preservation needs of professional schools such as law and medicine, nor an extensive system of decentralized or regional campus libraries.

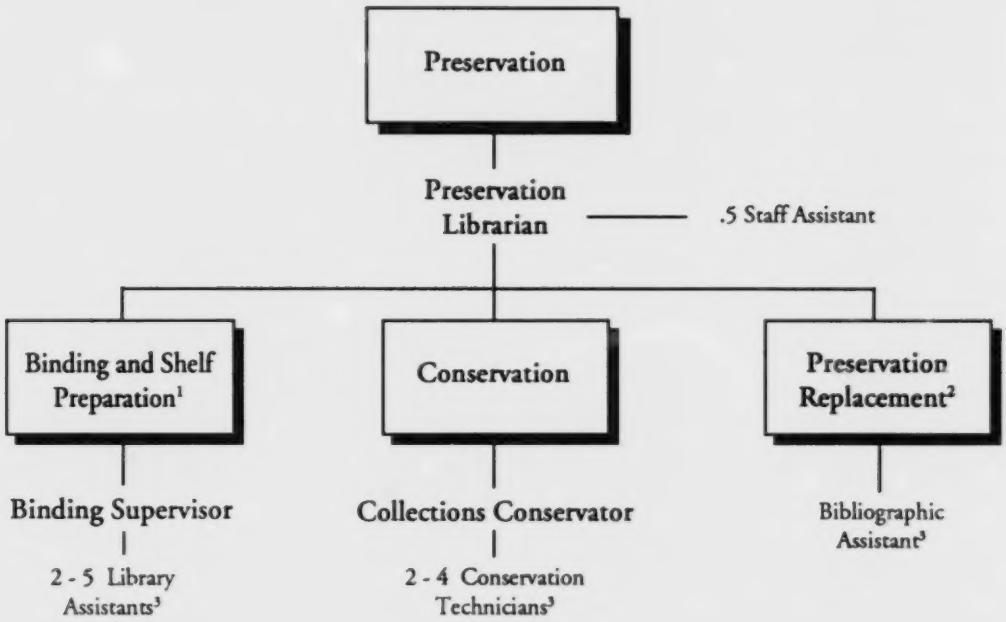
The models include four major operational units–binding and shelf preparation, conservation, and preservation replacement–but do not reflect such organizational connections as would exist between the circulation and preservation departments, or between a preservation department and a preservation committee. In addition, many staff in a research library contribute to preservation efforts, including bibliographers, stack maintenance personnel, building services managers, and catalogers. The ARL Preservation Statistics attempt to capture this information requesting statistics for staff in the preservation unit, as well as staff engaged in preservation activities library-wide.

Although the major operational units of a preservation department are covered in the models presented, the staffing and budget necessary to launch a mass deacidification program are not included. Human and material resources needed for such a program are discussed in general terms on pages 19-20, but organization and staffing levels, and models for resource allocation in relation to collections size, have yet to be developed in ARL libraries.

The operational unit responsible for preservation replacement and reformatting is shown on the various organization charts, but the level of effort depicted is for the routine identification of brittle materials through circulation and use. Additional staff and resources are needed to participate in large-scale preservation microfilming projects or to implement a retrospective effort to identify and replace brittle materials. The models assume that preservation microfilming (like commercial library binding) is a contracted service, although a photoduplication unit is shown in the organization model for collections over 5 million volumes because this activity often occurs in-house in larger libraries.

A mature preservation program is defined as one with all major operational units in place and in balance; that is, a full range of preservation options are available so that appropriate decision making and disposition of materials is possible. However, while operational units will be similar in most ARL libraries, the level of effort appropriate to a particular library will be based on many factors other than size, including the age of the library, the scope and nature of special collections, whether the library includes a major archives, the environmental conditions under which the collections have been housed over time, the percentage of collections that circulate, and the size of the student body in relation to the size of the collections.

1 Organization and Staffing Model for a Mature Preservation Program
ARL Library under 2 million volumes



Personnel: 8.5 - 13.5 FTE (2 professional)

Budget: $.3 - .7 million

% of total Library Expenditures: 5-10%

% of total Materials Expenditures: 15-30%

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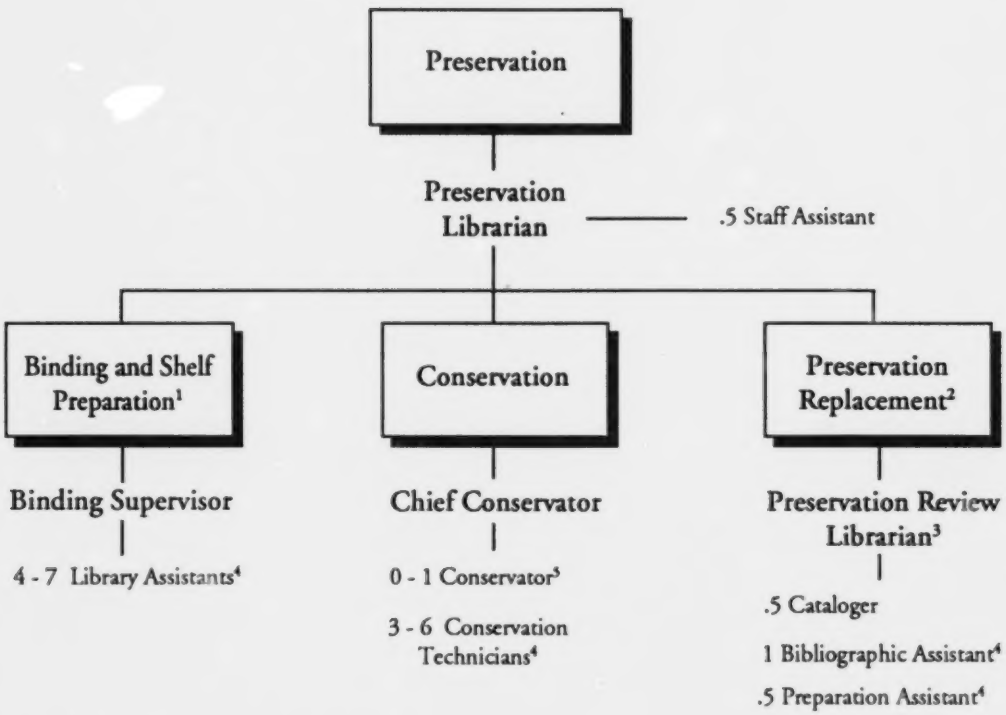
[1] Includes traditional binding and shelf preparation activities, but excludes personnel needed for preparation for mass deacidification.

[2] Excludes staffing for externally-funded microfilming projects. Assumes both microfilming and preservation photocopying are contracted.

[3] Paraprofessional positions could be filled with a combination of support staff and student assistants to equal FTE.

2 Organization and Staffing Model for a Mature Preservation Program
ARL Library 2 to 3 million volumes



Personnel: 13.5 - 20.5 FTE (3.5 - 4.5 professional)

Budget: $.4 - .8 million

% of total Library Expenditures: 5-10%

% of total Materials Expenditures: 15-30%

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[1] Includes traditional binding and shelf preparation activities, but excludes personnel needed for preparation for mass deacidification.

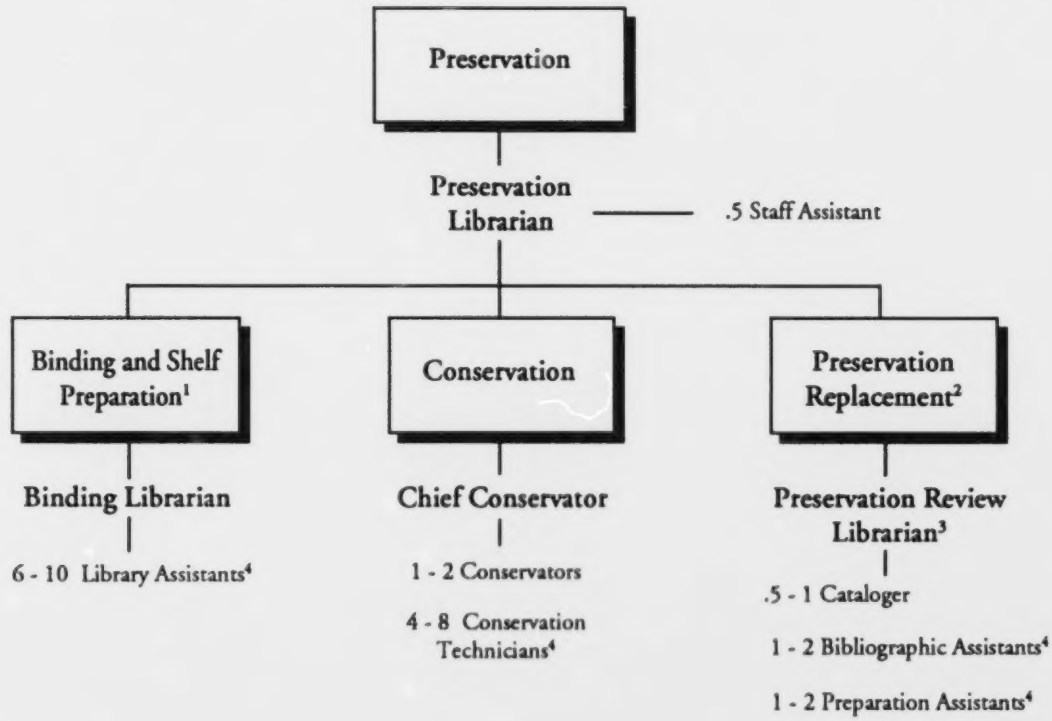
[2] Excludes staffing for externally-funded microfilming projects. Assumes both microfilming and preservation photocopying are contracted.

[3] In some libraries this position may serve as the assistant head and the bibliographic assistant and cataloger may be part of technical services.

[4] Paraprofessional positions could be filled with a combination of support staff and student assistants to equal FTE.

[5] A second Conservator may be needed depending upon the nature of special collections.

3 Organization and Staffing Model for a Mature Preservation Program
ARL Library 3 to 5 million volumes



Personnel: 18.5 - 30 FTE (5.5 - 7 professional)

Budget: $.5 - $1 million

% of total Library Expenditures: 5-10%

% of total Materials Expenditures: 15-30%

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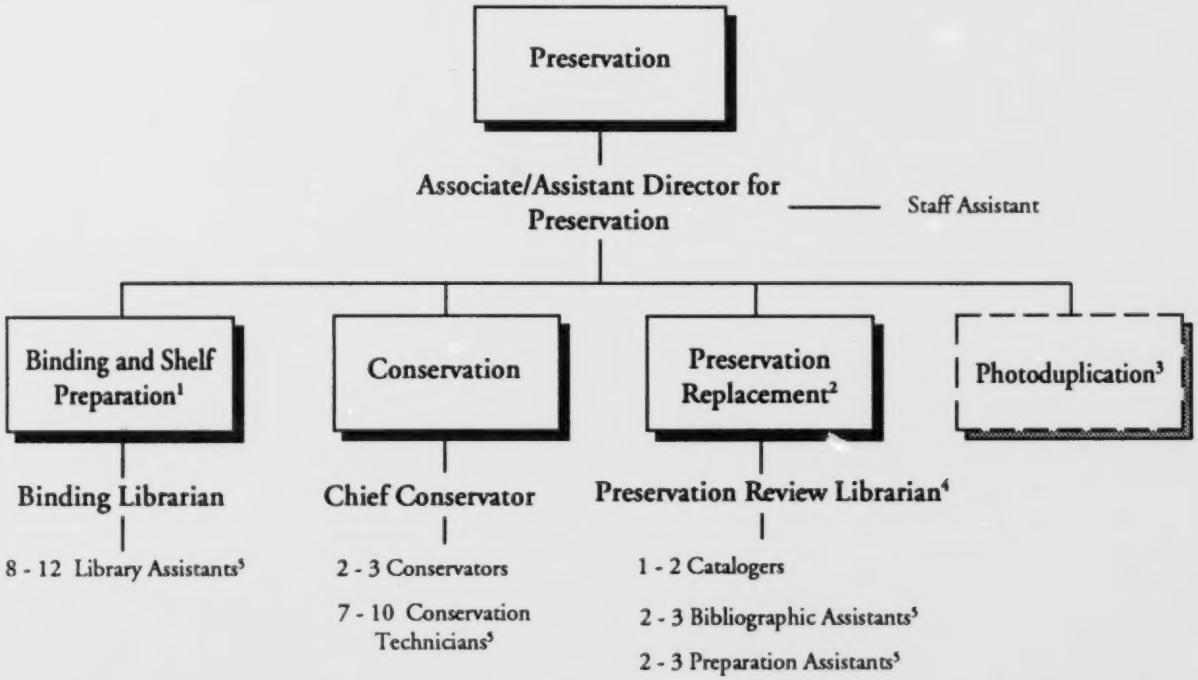
[1] Includes traditional binding and shelf preparation activities, but excludes personnel needed for preparation for mass deacidification.

[2] Excludes staffing for externally-funded microfilming projects. Assumes both microfilming and preservation photocopying are contracted.

[3] In some libraries this position may serve as the assistant head and the bibliographic assistants and cataloger may be part of technical services.

[4] Paraprofessional positions could be filled with a combination of support staff and student assistants to equal FTE.

4 Organization and Staffing Model for a Mature Preservation Program
ARL Library over 5 million volumes



Personnel: 27 - 38 FTE (7 - 9 professional)

Budget: $.8 - $3 million

% of total Library Expenditures: 5-10%

% of total Materials Expenditures: 15-30%

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[1] Includes traditional binding and shelf preparation activities, but excludes personnel needed for preparation for mass deacidification.

[2] Excludes staffing for externally-funded microfilming projects. Without a Photoduplication unit, microfilming and preservation photocopying would be contracted out.

[3] A Photoduplication unit is often associated with preservation and would typically handle microfilming and photocopying in addition to some public services functions.

[4] In some libraries this position may serve as the assistant head. Cataloging may be done in the Cataloging Dept.

[5] Paraprofessional positions could be filled with a combination of support staff and student assistants to equal FTE.

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Preservation Program Benchmarks for Selected Core Activities

Introduction

The benchmarks presented herein were synthesized by the project team from the results of the 1989/90 ARL Preservation Statistics Questionnaire. In addition to this quantitative analysis, the benchmarks reflect the history and development of preservation programs in ARL libraries. They are not intended to be prescriptive, but rather are indicators of the level of effort that can be expected as a preservation program develops. As with the suggestions for organization and staffing models, the benchmarks are presented for collections of four sizes: under 2 million volumes, 2 to 3 million volumes, 3 to 5 million volumes, and over 5 million volumes. The figures reflect the level of preservation effort required for a central library collection. They are not intended to reflect the level of effort needed to provide preservation services for professional schools such as law or medicine, nor an extensive system of decentralized or regional campus libraries.

Benchmarks are presented for personnel and preservation expenditures expressed as a percentage of the total library budget. These are overall indicators of preservation program development. Production benchmarks are included for core activities that are well established, and for which statistics have been kept by the majority of libraries. Given the newness of most preservation programs and the ARL Preservation Statistics Questionnaire, and the differences in preservation record keeping from library to library, benchmarks could not be provided for all preservation activities underway in ARL libraries.

The benchmarks reflect an ideal, rather than a real, progression of preservation program development. In reality, the maturation of specific components is likely to proceed unevenly. For example, a library may have developed its commercial library binding program to Level four, but be at a Level two in its development of a brittle book replacement program. A library with a professional conservator on staff may have developed conservation activities to a Level three before it hires a preservation librarian and institutes formal preservation planning.

As a general guideline, however, Level one programs may be characterized by libraries that carry out preservation activities such as binding and book repair, but are not organized for a library-wide preservation effort that incorporates programmatic and planning elements. A preservation committee may have been appointed to assess the need for a preservation program. The committee may have sponsored staff training sessions, developed training tools such as posters and bookmarks carrying preservation messages, or put up an exhibit on preservation; and the library may be considering the initiation of an ARL Preservation Planning Program self study.

Level two programs may be characterized by libraries that have assigned certain preservation responsibilities to a professional librarian on a part-time basis, but have

not organized a preservation unit with distinct authority and responsibility for planning and development. The preservation coordinator would typically work in conjunction with a preservation committee to simulate grass roots preservation program development through such activities as preservation education sessions for staff, drafting an emergency preparedness plan, and writing a report for the director on the need for conservation services. The library may be considering or may have recently conducted a ARL Preservation Planning Program self study.

Level three programs may be characterized by libraries that have made a commitment to preservation program development, and have organized most preservation activities into a formal preservation unit under the direction of a preservation librarian. Typically the library would have conducted an ARL Preservation Planning Program self study or otherwise engaged in long-range preservation planning, and would have codified a number of library-wide preservation policies. A Level three preservation program would have core preservation components in place (i.e., conservation, binding, staff and user education, disaster preparedness, brittle book replacement); and would have identified the need for improved environmental controls, additional professional staff for preservation, and an expanded reformatting program.

Level four may be characterized by libraries that have programs of sufficient depth and breadth to make significant progress in the preservation of the retrospective collections over the next two decades, while maintaining an appropriate level of prospective preservation activity for incoming materials. Preservation policies are fully integrated into all aspects of library services. The preservation program is evolving to meet the changing needs of the collections rather than developing, as with Level three, in response to the identification of unmet needs. A Level four preservation program is likely to require further growth in order to bring the level of preservation activity into line with the need (e.g., so that the number of brittle books replaced or reformatted equals the number of brittle books identified). Staff would typically be engaged in planning for new programmatic elements such as mass deacidification and preservation of non-book collections.

1 Preservation Program Benchmarks for Selected Core Activities

ARL library with under 2 million volumes

Personnel (number of full time equivalent staff, including student assistants)

	professional	support staff	total staff
Level one:	0	< 2	< 5
Level two:	>0 – <1	2 – 5	5 – 9
Level three:	1 – <2	> 5 – 7	> 9 –12
Level four:	>2	> 7	> 12

Expenditures as a percent of total library budget

Level one:	4 %
Level two:	> 4–5 %
Level three:	> 5–6 %
Level four:	> 6 %

Conservation Treatment (volumes treated)

	minor	intermediate
Level one:	< 1,800	< 150
Level two:	> 1,800–4,000	150–850
Level three:	> 4,000–6,000	> 850–1,500
Level four:	>6,000	> 1,500

Protective Enclosures

Level one:	< 1,000
Level two:	1,000–2,000
Level three	> 2,000–3,000
Level four:	> 3,000

Commercial Library Binding

	expenditures	number of volumes
Level one:	NA	NA
Level two:	$37–$70,000	3,700–7,000
Level three:	> $70,000–$130,000	> 7,000–13,000
Level four:	> $130,000	> 13,000

Reformatting (microfilmed and photocopied volumes)

Level one:	< 50
Level two:	> 50–300
Level three	> 300–800
Level four:	> 800

2 Preservation Program Benchmarks for Selected Core Activities

ARL library with 2 to 3 million volumes

Personnel (number of full time equivalent staff, including student assistants)

	professional	support staff	total staff
Level one:	0	< 3	< 5
Level two:	0–1	3–5	5–9
Level three:	>1–3	> 5–8	> 9–15
Level four:	> 3	> 8	> 15

Expenditures as a percent of total library budget

Level one:	< 4 %
Level two:	> 4–5 %
Level three:	> 5–7 %
Level four:	> 7 %

Conservation Treatment (volumes treated)

	minor	intermediate
Level one:	< 2,500	< 300
Level two:	2,500–5,000	300–1,000
Level three:	> 5,000–8,000	>1,000–3,000
Level four:	> 8,000	> 3,000

Protective Enclosures

Level one:	< 1,500
Level two:	1,500–3,000
Level three	> 3,000–5,000
Level four:	> 5,000

Commercial Library Binding

	expenditures	number of volumes
Level one:	NA	NA
Level two:	$80,000–$120,000	8,000–12,000
Level three:	>$120,000 –$200,000	> 12,000–20,000
Level four:	> $200,000	> 20,000

Reformatting (microfilmed and photocopied volumes)

Level one:	< 100
Level two:	100–500
Level three	> 500–1,500
Level four:	> 1,500

3 Preservation Program Benchmarks for Selected Core Activities

ARL library with 3 to 5 million volumes

Personnel (number of full time equivalent staff, including student assistants)

	professional	support staff	total staff
Level one:	0	< 3	< 5
Level two:	1–2	> 3–8	> 6–12
Level three:	> 2–5	> 8–12	> 12–19
Level four:	> 5	> 12	> 19

Expenditures as a percent of total library budget

Level one:	< 4 %
Level two:	> 4–5 %
Level three:	> 5–7 %
Level four:	> 7 %

Conservation Treatment (volumes treated)

	minor	intermediate
Level one:	< 5,000	< 500
Level two:	5,000–7,000	500–1,000
Level three:	> 7,000–10,000	> 1,000–3,000
Level four:	> 10,000	> 3,000

Protective Enclosures

Level one:	< 3,000
Level two:	3,000–5,000
Level three	> 5,000–7,000
Level four:	> 7,000

Commercial Library Binding

	expenditures	number of volumes
Level one:	NA	NA
Level two:	$200,000–$250,000	20,000–25,000
Level three:	>$250,000 –$350,000	> 25,000–35,000
Level four:	> $350,000	> 35,000

Reformatting (microfilmed and photocopied volumes)

Level one:	< 500
Level two:	500–1,000
Level three	> 1,000–3,000
Level four:	> 3,000

4 Preservation Program Benchmarks for Selected Core Activities

ARL Library with more than 5 million volumes

Personnel (number of full time equivalent staff, including student assistants)

	professional	support staff	total staff
Level one:	0	< 5	< 10
Level two:	1–3	5–15	10–20
Level three:	> 3–7	> 15–20	> 20–30
Level four:	> 7	> 20	> 30

Expenditures as a percent of total library budget

Level one:	< 4 %
Level two:	4–6 %
Level three:	> 6–8 %
Level four:	> 8 %

Conservation Treatment (volumes treated)

	minor	intermediate
Level one:	< 10,000	< 1,000
Level two:	10–15,000	1–3,000
Level three:	> 15,000–20,000	> 3,000–5,000
Level four:	> 20,000	> 5,000

Protective Enclosures

Level one:	< 5,000
Level two:	5,000–7,000
Level three	>7,000–10,000
Level four:	> 10,000

Commercial Library Binding

	expenditures	number of volumes
Level one:	NA	NA
Level two:	$200,000–$400,000	20,000–40,000
Level three:	>$400,000 –$500,000	30,000–50,000
Level four:	> $500,000	> 50,000

Reformatting (microfilmed and photocopied volumes)

Level one:	< 1,000
Level two:	1,000–3,000
Level three	> 3,000–6,000
Level four:	> 6,000

Preservation Program Case Histories

Introduction

Case histories of four different ARL libraries are presented as examples of the evolution of preservation program development within different institutions and in a variety of settings. As with the organization models and benchmarks presented earlier in this report, the case histories are presented in order by size of library.

The case histories reveal that each library's history of program development is unique; but they also demonstrate that the development of a preservation program is a step-by-step process, albeit one that is affected by individuals, opportunities, and timing. The process of preservation program development on a library-wide scale begins, however, with the acknowledgement on the part of the library administration that preservation requires additional study, additional resources, and a supporting structure within the library.

For each library, the case history describes important developmental milestones, discusses the placement of preservation within the library, lists program components and staffing, and gives a sense of goals and future areas of exploration and development.

1 University of Delaware Library

The University of Delaware Library contains over 1.9 million volumes; and 1.5 million microforms, videotapes, and other non-book material. In the summer of 1989 a Preservation Officer was appointed to develop a comprehensive preservation program for the general and special collections. Prior to this time, routine commercial binding of general collections materials and encapsulation of special collections materials were the primary preservation activities carried out on a regular basis. Books from Special Collections received conservation treatment at a regional conservation center.

The Preservation Officer spent much of the first six months on the job becoming familiar with the organization, its structure, and the ways in which preservation might be best integrated into day-to-day activities. During this time, staff education sessions on proper book care and handling were held and planning meetings with library staff took place.

In November 1989, the Library began the ARL Preservation Planning Program (PPP) self study to evaluate the condition of the collections, environmental storage conditions, disaster preparedness, and organizational issues pertaining to preservation. The PPP is a three part self-assisted planning process that involves brainstorming and strategy sessions, task force investigations, and a set of recommendations submitted to the Director of Libraries. The Preservation Officer was appointed project coordinator for the PPP and over thirty library staff members participated.

In late 1989 the binding and shelf preparation units, which had for many years resided in the Central Processing Department of the Collection Management Division, were shifted to the Preservation Office where procedures were evaluated, work flow issues examined, productivity monitored, and quality control measures introduced. Some tasks that had formerly been part of binding preparation were relocated. For example, the responsibility for ordering missing periodical issues was retained in the Central Processing Department where orders can be initiated and better track of incoming issues can be maintained. Several operational procedures were implemented to speed processing of materials such as sorting books by type so they can be batch processed for the shelf.

New procedures were introduced in the shelf preparation unit. Polyvinyl acetate adhesive replaced animal glue for attaching book plates and date-due pockets. In early 1990, the ABLE automated binding preparation system was installed in the binding preparation unit and staff were trained in its use. Staff were also trained to search DELCAT, the Library's NOTIS-based integrated online catalog, and the Faxon SC-10 system used to maintain serial records.

In the spring of 1990, the binding and shelf preparation areas were renovated. Unneeded furniture was removed, computer terminals were relocated for better access, and additional shelving was added to ease shipping and receiving duties. Student workers, who make up a large part of the work force, also began to receive basic preservation training. This training, carried out during their first week of

employment, includes reviewing a preservation training packet and viewing the videotape "Murder in the Stacks," which discusses proper book handling.

The Preservation Officer also worked on establishing a conservation book repair unit to repair general and selected special collections materials. In July 1990 a new position was assigned to the Preservation Office and a position description for a conservation assistant was drafted and posted nationally, and in October 1990 the position was filled. To support conservation work, a Vagelli board shear, a Minter ultrasonic welder (for encapsulation), and a book press were purchased, and book repair procedures were implemented.

A condition survey (carried out by one of the Preservation Planning Program task forces) provided the Preservation Officer with quantifiable data which was used to project costs for two program components planned for the future: mass deacidification of acidic materials and reformatting of brittle and deteriorated materials. To explore these program components, several meetings were scheduled in the fall of 1990 between the head of the Collections Development Department and the Preservation Officer to discuss selection for preservation.

To integrate effectively the preservation program into the broad operations of the Library and to keep staff well-informed of preservation-related concerns and issues, the Preservation Officer worked with several assistant directors and department heads to identify individuals in each department with whom regular liaison meetings could be held to discuss technical, procedural, and work flow issues.

At the end of sixteen months, a procedures manual was completed and distributed to preservation staff that outlined pertinent procedures in each of the preservation units: shelf preparation, binding preparation, conservation, and replacement and reformatting.

Short term preservation program goals include the implementation of key recommendations identified in the final report of the Preservation Planning

Program self study; the continued development of in-house operations to meet local preservation and conservation needs; and the identification and utilization of contracted microfilming, deacidification, reformatting, and conservation services when cost savings or need warrant. It is recognized that these services require major resources and deliberations have begun as to how such resources might be identified and/or obtained.

Susan Brynteson
Mark Roosa

2 University of Connecticut Libraries

On June 30, 1977, a staff assistant in the Book Processing Department of the Wilbur Cross Library, formerly the main library of the University of Connecticut Libraries, submitted an unsolicited report to the Library Administration. The report discussed the unsatisfactory results of existing book repair practices, which involved the "use of vinyl coated mending tape, plastic hinge tape and polyvinyl acetate adhesive;" and recommended that (1) in-house repairs be limited to "those . . . which can be accomplished quickly, easily, and without damage to volumes in terms of their rebindability," (2) that better use be made of commercial binding services, and (3) that responsibility for reviewing worn and damaged books be transferred from the Acquisitions Department to the author of the report, who should "acquire those skills necessary to evaluate intelligently the condition of [damaged library materials]." So began the Libraries' slow and sometimes interrupted efforts to gain preservation expertise, define reasonable goals, and establish a preservation program commensurate with the nature and scope of the Libraries' preservation problems.

As part of the planning activities that preceded a move from the Wilbur Cross Library to what is now the Homer Babbidge Library, then under construction, the University Librarian requested a planning document that would define the preservation challenge and discuss in broad terms how it might be addressed by the University of Connecticut Libraries. That planning document, submitted on February 21, 1978 by the author of the 1977 report, discussed preservation issues in terms of paper acidity, environmental conditions, materials handling practices, treatment options, and staffing.

In December 1978, the University Librarian charged the Assistant University Librarian for Technical Services with "actively pursu[ing] over the next several months the steps that we should . . . take to develop . . . a [preservation program] for a library of our size and scope." In April 1979 a questionnaire was distributed to selected staff, asking about the types of preservation activities being performed in the libraries; the types of activities that should be performed but were not; and what the major responsibilities of a preservation unit should be, if one were established. The results of that survey reinforced an administrative commitment to pursue preservation planning more vigorously.

When the National Endowment for the Humanities funded a fellowship in conservation and preservation at Yale University in 1979, the author of the 1977 report was encouraged by the Library Administration to apply, and was granted release time to participate. This broad educational experience supplemented the staff assistant's training in bookbinding, which the Library had supported intermittently beginning in 1974. In March 1980, at the conclusion of the fellowship program, the staff assistant was assigned responsibility for undertaking a study of library-wide preservation needs and recommending a course of action. In 1981 a report of findings and recommendations ("Conservation and Preservation of Library Materials: A Program for the University of Connecticut Libraries") was accepted by the Library Administration.

A proposal submitted by the staff assistant on August 23, 1981 was telling, however, of difficult financial times for the University. It responded to an administrative charge to enumerate, in priority order, activities that "could be accomplished without additional resources during the first three years of a . . . preservation program." While the position of Preservation Officer was established in September 1981 (reporting to the Head of Acquisitions), the coming years were, indeed, difficult ones for the Libraries. Preservation efforts focused on upgrading approaches to book repair and pamphlet binding, improving the Libraries' commercial binding program, making significant revisions to existing binding specifications, developing an extensive preservation reference file, monitoring environmental conditions in library buildings, establishing procedures for restricting access to brittle materials and dealing with mold infected materials, developing a disaster preparedness plan, providing preservation orientation sessions for permanent and student staff, and working with staff throughout the libraries to revise a variety of procedures that were damaging to, or potentially damaging to, library materials.

Resource shortages inevitably created problems for the newly established program. The very definition and creation of a discrete preservation effort generated new expectations that could not be met—particularly with regard to the services that are so much in demand by departmental and special libraries, including conservation treatment and retrospective commercial binding. Repeated rounds of program updates and request for resources yielded little in the way of needed allocations, but did lay the groundwork for increased commitment once the University's fiscal situation improved. In January 1985 the Processing Department was dissolved; repair, commercial binding preparation, and shelf preparation activities were placed within a newly created Preservation Department; and the Preservation Officer was named head of that department.

A major breakthrough occurred in September 1986, when the Libraries' first collections conservator was hired (at the expense of 1 FTE in the Bindery Preparation Unit). The incumbent, co-author of a key text in routine conservation treatment procedures, came to the University with extensive experience as a trainer and supervisor. In November, the Library Conservator and the Head of the Preservation Department designed a mechanism for assessing the condition of the general collections in an expedient manner. Together they inspected every volume returned during 14 consecutive days to the main Circulation Desk in the Babbidge Library. Of the 6,849 volumes evaluated, slightly more than 48% were in need of treatment. While these figures were not such that precise projections could be made regarding the overall condition of the collections, they reflected unequivocally a problem of significant dimension.

In March 1987, just short of one decade after the emergence of the Libraries' first preservation-related report, the Head of the Preservation Department submitted to Library Administrators the document "The University of Connecticut Libraries 10-Year Plan: Preservation of the Collections." It lays out a strategy for program development based on progress already made, and on predicted future development in the nature and scope of the Libraries' collections. For four years it has served as the benchmark against which the Preservation Department has operated and budget proposals have been developed.

Also in 1987, the University Administration committed special resources to the renovation of space in the Babbidge Library for the development of a 1,800-square-

foot conservation laboratory. Since that time approximately $51,000 has been committed from regular operating funds for the purchase of new equipment to complement existing items (thanks to the strong equipment budgets enjoyed by the Libraries for several years), supplemented by a $10,000 grant from a private foundation. Three board shears, a fume hood, an ultrasonic welder, numerous book presses, storage cabinets, and other major pieces of equipment are now in place. The construction of work benches and storage racks has been funded by the University, but while blueprints are complete, implementation in the short-term is uncertain. In the interim, miscellaneous items have been scavenged from the Libraries' inventory of furniture not currently in use, and are meeting needs satisfactorily. Conservation supply budgets have ranged from $12,000 to 20,000 in recent years.

Without question, scarce staff resources have been the major stumbling block to program growth. The Bindery and Shelf Preparation Units (5 FTE—3.5 FTE permanent staff and 1.5 FTE student assistants) successfully manage the commercial binding program and shelf preparation work flows for the main library, and non-periodicals work flows for the other libraries on the Storrs campus. (The University's law and medical schools are not at Storrs.) The addition of a full-time clerk allocated half-time to Bindery preparation and half-time to Shelf Preparation would add needed depth.

The Conservation Unit, however, is severely handicapped by the Libraries' system-wide personnel shortages. Many library departments are understaffed, even in the not-so-flush research library context; and positions are being lost rather than gained. The Libraries have been unable to secure permanent support staff for Conservation, despite the inclusion of a technician's position in the last four annual budget requests. The Library Conservator is assisted by approximately 2.5 FTE student assistants, and intermittent temporary staff (.5 FTE). For this reason, conservation efforts for the 2,271,849-volume Libraries are focused almost entirely on high-use materials from the general and reference collections, with the various special collections and Historical Manuscripts and Archives Division (11,000 linear feet of material) receiving almost no attention. (The collections are largely centralized, and contain few duplicate copies.) Plans to provide training in routine conservation treatment procedures for professional and branch libraries, and to provide conservation services based on a point system, are far from being realized.

Nonetheless, the Preservation Department is well grounded in terms of its design, operating principles, and institutional influence. While production levels are not high enough to make perceivable changes in the overall condition of a well-worn collection, much has been accomplished, and accomplished well. In FY 1990, 12,130 items were conserved, 25,878 volumes library bound, and 63,942 items were prepared for shelving for the Storrs libraries. Binding figures rise to 34,471 volumes when the professional and regional campus libraries are factored in. During 1989 and 1990 bindery preparation activities were almost fully automated. While staff resources have not been available to follow through on the microfilming of the significant, not-yet filmed brittle books that are identified daily in the conservation work flow, a sound rationale for decision making is in place,and interaction between preservation and collection development staff is regular and well-informed.

In FY 1991, the Department undertook its first microfilming project, preparing the University's student newspaper (1896-91) for commercial filming. Detailed

specifications were developed that will serve as the basis for future projects, and the newspaper provided fertile training ground for film target production. The paper has been published under 6 different titles in less than a century, broke correct voluming sequence five times (once jumping from Volume 43 to Volume 111 and continuing on), and required over 300 targets to identify instances of misnumbering, misdating, mutilation, and missing pages or issues. The processing experience left preservation staff feeling well prepared for future challenges.

Also in FY 1991, the department accepted an offer from a firm marketing mass deacidification services to treat a sample batch of materials at no cost to the Libraries except a commitment to help evaluate results. In all, 441 acidic nineteenth and twentieth century modern maps were deacidified successfully, encapsulated by conservation staff, and returned to the Map Library. The 72 sample volumes that were treated have been set aside and will be monitored over a long period of time for evidence of visual and chemical changes.

The Preservation Department also contributes to the need for preservation training opportunities in North America by providing summer conservation internships for students enrolled in the Conservation Programs at Columbia University, by guest lecturing for University classes and for regional and national audiences, and by helping to build the body of published literature available to librarians and archivists seeking preservation-related information.

In the midst of yet another budget crisis, it is difficult to present a sanguine picture of the immediate future—but with each passing year more work is accomplished, library staff and administrators gain a greater understanding of preservation problems and their solutions, preservation activities and goals are integrated more thoroughly into the Libraries' broader programs and goals, and the Preservation Department is better prepared to absorb an infusion of resources in a way that is highly appropriate to the situation at hand.

Jan Merrill-Oldham
Norman Stevens

3 The Ohio State University Libraries

Preservation of the library collections at Ohio State was a genuine concern among the library administration, its librarians, and staff long before the first Preservation Officer was appointed in late 1984. It was in the subsequent year, however, that the primary impetus emerged for undertaking systematic preservation planning and action. Since then, systematic preservation efforts have been undertaken involving Ohio State's 4.4 million volumes, 3.1 million microform units, and other large collections of non-book materials. This effort was aided in no small part by engaging in an ARL Preservation Planning Program self study, which generated both a general statement of primary preservation issues and a five-year plan of action.

Preserving The Ohio State University Libraries' Collections: The OSUL Preservation Planning Program, was completed in 1986 after a one-year self study that involved thirty-eight librarians and staff and identified five areas of primary importance for a systematic approach to preserving the collections: 1) a comprehensive written collection management and development policy was needed to guide preservation policy; 2) an extensive, active preservation replacement program was essential, given the condition of the collections; 3) an intensive preservation education program was needed for library personnel and users of the collections; 4) the physical environments in which the collections were housed required significant improvement; and 5) the growing special collections required particular consideration in regard to their conservation.

These five overarching statements were supplemented by over one hundred specific and general recommendations relating to the Libraries' collections and the physical environments in which they are housed, collection management, conservation and replacement strategies, and usage and handling. Several recommendations required relatively large amounts of new or redirected money; others called for major investments in staff time; and many recommendations required rather small efforts or changes. Significant progress has been made by early 1991, but major work remains to be done. For this reason a formal re-visit of the study's plan and assessment of progress is planned for 1991, five years from the completion of the 1986 report.

Progress toward preserving the valuable collections of the University Libraries follows logically and philosophically from the mission of the University: the collections are preserved as part of the Libraries' mission of supporting teaching and research, and providing related public services. Within the Libraries an institutional commitment to preservation and evidence of its importance are shown by the placement of the Preservation Office within the Libraries' central administrative structure, along with Public Services, Technical Services, Automation, Collection Development, User Education, Personnel, Budget/Planning and Development (fund raising). The preservation officer's reporting line is to the Director of Libraries, making Ohio State one of the first ARL libraries to recognize and implement this administrative arrangement for preservation.

Organization and Resources

Within this administrative model, the preservation officer has both line and staff responsibilities. The former involves managing a budget and staff for the Collection Maintenance and Bindery Preparation Department and the latter involves working closely with other administrative and line units regarding preservation planning, policy, and practice. The position of preservation officer was funded beginning in 1984 by eliminating the position of assistant to the director.

The Collection Maintenance and Bindery Preparation Department (18.4 FTE in 1991) was created in 1984 by reorganizing former Technical Services positions related to binding, book repair, and preparation of new materials for use. Positions were added to this department permanently in 1985 through a new University-sponsored program that included 5 FTE student assistants and .5 FTE staff. An additional 1.5 FTE was added through two interdepartmental transfers. A trained collections conservator was appointed in 1985 to head this department, following a national search. The department head manages the department's day-to-day operations and is a key person in the Libraries' preservation effort. The position reports to the preservation officer.

Within the Collection Maintenance and Bindery Preparation Department are two divisions: Collection Maintenance (11.5 FTE, including 5 FTE student assistants), and Bindery Preparation (5.9 FTE, including .9 FTE student assistants). Collection Maintenance has three primary operations: 1) conservation (2.5 FTE, including the division's supervisor, who occupies a conservation specialist position; 2) preparation of newly cataloged materials for use (3.0 FTE); and 3) replacement and reformatting (1.8 FTE), which is configured as a "brittle books" unit, and shares one staff member with the acquisition department.

The Collection Maintenance Division occupies a 3,800-square-foot space formerly occupied by an in-house trade bindery closed in 1980. This former bindery was very suitable for renovation to a conservation facility, especially since much of the existing equipment was usable. Additional conservation equipment (a fume hood, sinks, etc.) have been acquired in subsequent years to expand the capabilities of the division; but space and equipment notwithstanding, the real constraint on the expansion of conservation efforts is the limited growth in the number of staff to undertake the work.

The reformatting and replacement unit within the Collection Maintenance Division was set up in 1987, and the first of several pilot projects involving brittle books was tested and completed. Preservation microfilming and preservation photocopying, also begun in 1987, are done through contractual arrangements, although pamphlets are photocopied in-house within the division. The practice of "prospective cataloging" of master microforms was tested and implemented through this unit and the cataloging department, and has contributed to the development of a national model for this practice.

The Bindery Preparation Division is responsible for the rebinding and first-time commercial binding program within the Libraries. The binding budget has increased about 50% since 1984, and is primarily targeted at serials and high-use monographs with a heavy emphasis on the commercial binder's recase option. Binding specifications were redrafted in 1985 to reflect conservation concerns and to provide improved turnaround time. An automated binding records system, installed in 1985 by the binder, enabled the transfer of two FTE staff to the newly-created Collection Maintenance Division for work in conservation.

Since its inception in 1985, the Collection Maintenance and Bindery Preparation Department has greatly expanded the options available to collection managers for preserving collections. Nevertheless, the demand for conservation, rebinding, and replacement still far outstrips the ability of the department to supply these services. Although a quota system for the general collections has allowed a regular outlet for routine conservation treatment, the Libraries' large and varied special collections have yet to reap such treatment benefits. This is the case even though the conservation supplies budget has grown from about $3,000 in 1983/84 to about $40,000 in 1990/91. A detailed preservation needs assessment of the special collections, something not part of the 1985/86 self study, is planned for the early 1990s.

System-wide Preservation Planning and Action

At Ohio State the administration of the preservation program involves close cooperation with technical services, public services, collection development, automation, user education, and other areas. Relationships and interactions concern setting priorities, defining practices, and planning workflow; and collection- and use-related issues. Included in this are emergency preparedness, environmental monitoring, external funding efforts, documentation of practices, new and renovated facilities planning, user and staff education, exhibitions, special collections, and security.

The Libraries have a standing Emergency and Disaster Control Committee, chaired by the preservation officer, whose charge is to create and maintain an emergency manual, to attempt to anticipate and prevent disasters, and to lead salvage and recovery efforts when necessary. Complementing the disaster team's work is an environmental monitoring program. The preservation officer is also involved in the planning of new and renovated library facilities, of which major design factors are concern for preservation and disaster prevention. One major success in this area was in the upgrade of the 1.8-million-volume Main Library stacks tower in 1986-87, accomplished at a cost of $567,000.

Ohio State has seen some success in obtaining external funding for preservation projects from the National Endowment for the Humanities and the Department of Education's Title IIC program. These projects have allowed the Library to preserve targeted strong collections, when the University's funding has been unable to accomplish those goals.

Future Developments and Goals

By all measures, preservation at Ohio State made dramatic progress in the 1980s. However, given the very tight budgetary environment anticipated at Ohio State in the early 1990s, it will be difficult to continue such growth in the Libraries' preservation programs. Nevertheless, the Libraries are prepared for better financial times. All of the organizational components are in place for expansion of capacity and further development, including conservation, replacement, mass deacidification, and the promises of digital reformatting technologies. Each of these strategies will be necessary to assure that the collections remain in usable condition for the more than 55,000 Ohio State students and the thousands of others in the state and nation who require them.

Wesley L. Boomgaarden
William J. Studer

4 University of California at Berkeley Library

A substantial study of the preservation needs of the Berkeley collections (Jo Ann Brock, A Program for the Conservation and Preservation of Library Materials in the General Library, University of California, Berkeley, 1975) led to recognition of a need to consolidate and increase efforts to preserve the 7.5 million volume collection. In 1980, Berkeley successfully recruited its first preservation administrator and formally established the Conservation Department. The Department is charged with maintaining the collections in serviceable condition for instruction and research, and advises library collection managers on the overall care and security of materials in their charge.

Beginning with binding preparation and repair of circulating collections (1980), the program soon grew to include a preservation replacement division (1981), then annexed the Library's existing copy photography and microfilming operations (1983), and hired conservators to initiate the rare materials conservation program (1983-85). Funding grew along with the expanding program to the current annual budget of $1.8 million (state funds and grant funds), which comprises approximately 7% of the Library's annual expenditures.

Organization and Staffing

The Conservation Department from its inception has reported to the Associate University Librarian for Technical Services. The work flow links between the preservation program and the technical service operations are greatly strengthened by this reporting structure. At the same time, a close working relationship has been established between the Conservation Department (especially the Head) and the AULs for Collection Development and Public Services, as well as with heads of individual library units.

Each of the major elements of a preservation program is in place and functioning. The five program divisions are: Binding Preparation, Conservation Treatment, Preservation Replacement, Library Photographic Service, and Administration (27.15 FTE total).

The Binding Preparation Division (2.5 FTE) is responsible for preparing and routing volumes to the University Bindery, monitoring their progress, and returning them to the appropriate library units. In FY 1989-90, 97,903 volumes were bound.

The Conservation Treatment Division is responsible for repair of the circulating collections and conservation of the rare collections. With a staff of 8.27 FTE, including two professionally trained conservators (one each for paper and books) and five conservation technicians, the division treated 26,639 items in FY 1989-90.

Replacement of materials too damaged or embrittled to repair is the responsibility of the Preservation Replacement Division (6.23 FTE). Volumes are identified by circulation staff or captured as part of large-scale, grant-funded collection preservation projects. Deteriorated materials are processed for replacement in a variety of formats, from commercial reprints to photocopies to microfilms. The Division processed over 13,000 volumes in FY 1989-90.

The Library Photographic Service (5.4 FTE) provides preservation microfilming and copy photography for the Library, and general photographic services to the public, on a cost-recovery basis.

Administration (4.75 FTE) includes three professional librarian positions, the Department Head, the Assistant Department Head/Head of Binding Preparation and Conservation Treatment Divisions, and the Head of the Preservation Replacement and Library Photographic Divisions, as well as the Office Manager and .75 FTE clerical assistance. Departmental administrative staff, in addition to planning and managing departmental operations, conduct the Library's Environmental Monitoring Program; coordinate and maintain the Disaster Preparedness Program; conduct educational programs; research products and services; and develop and implement preservation projects supported by extramural funding.

Development and Goals

The major goal of Berkeley's preservation program is to maintain the collections in serviceable condition at the lowest possible cost. Additional goals are to contribute to the profession by participating in education and training of preservation personnel, and by undertaking research and development in preservation management, products, and services.

The preservation program pursues two objectives towards the goal of maintaining the collections in serviceable condition, the first of which is to meet the immediate preservation needs of newly acquired materials and of materials from the retrospective collections. The organization and staffing of the Department has been developed to respond as effectively and efficiently as possible to the immediate (highest priority) preservation needs of the collections. Most of the preservation program's resources are allocated to this objective.

The second objective is to address collection-wide problems in a systematic fashion. Protection of all collections from disaster is an obligation that has been met through the development of a comprehensive disaster preparedness plan. Through consultations with appropriate University Staff, major renovations and new construction of library buildings include suitable environmental control and fire protection systems. Further, several subject areas have been the beneficiary of special preservation projects implemented during the last five years to provide conservation treatment and reformatting, including Western Americana, East Asian materials, Slavic and Russian emigre collections, and Western European languages and literatures.

Meeting collection-wide problems systematically increasingly has required the participation of collection development staff in selection for preservation and in choice of appropriate preservation methods. The preservation responsibility of selectors has become sufficiently large and important to be formally included in selectors' job descriptions.

Berkeley's program over the long term will continue to address the immediate needs of scholars and students for access to individual titles, and to review collections systematically, giving priority to nationally and internationally significant collections and to collections crucial to Berkeley's established and developing research and instructional programs.

A major planning initiative of Berkeley's preservation program was preparation of a university-wide plan to address the preservation needs of all nine University

of California campuses' library resources. With adoption of the plan in 1985 and initial (though insufficient) funding in 1986, the resulting University of California Preservation Program guides the development of preservation programs for all UC campuses and coordinates activities to ensure that state funds for preservation have the maximum impact on the needs of the collections. The operation and further development of the preservation program at Berkeley very much will follow the Plan to the benefit of the campus and the University.

Funding from the state to carry out the University's preservation plan never has been sufficient to meet the plan's objectives, thus stimulating the Library's (successful) efforts to secure outside funding to supplement state funding. In the past half decade, the Library Administration has committed increasing amounts of non-preservation funds from its operating budget to match available outside funds.

The additional goals of Berkeley's preservation program are to contribute to the preservation and library professions through education, training, and research in preservation. In pursuit of these goals, the program staff is very active regionally and nationally in preservation and library professional organizations.

During the last several years, the Berkeley program has developed and implemented several education and training programs for preservation staff from libraries other than UC Berkeley: for preservation administrators (1985-87), for microfilm project managers (1989), for conservation technicians (1990-91), and for libraries without preservation staff (1985 and 1990-91). As further needs are identified, the preservation program plans to continue to contribute to education and training.

Research in preservation product development and in preservation management studies is becoming an increasingly recognized requirement for advancement of the nation's research library preservation programs. As a relatively mature preservation program, Berkeley plans to contribute its experience to this research effort.

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